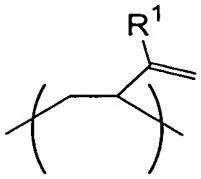
CLAIMS

1. An isoprene-based polymer including a structural unit represented by Formula (I):



. . . (I)

wherein R^1 represents an alkyl group having 1 to 10 carbon atoms or an alkenyl group having 1 to 10 carbon atoms,

wherein the isotacticity of an arrangement of the structural units is 60%mm or more in terms of triad content.

2. The polymer according to Claim 1, wherein R^1 in Formula (I) is a methyl group.

3. The polymer according to Claim 1 or 2, wherein the isotacticity is 99%mmmm or more in terms of pentad content.

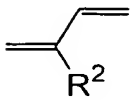
4. The isoprene-based polymer according to any one of Claims 1 to 3, wherein the rate of the structural units represented by Formula (I) in a microstructure is 95% or more.

5. The polymer according to any one of Claims 1 to 4, wherein the polymer has a number average molecular weight of 5,000 to

6,000,000.

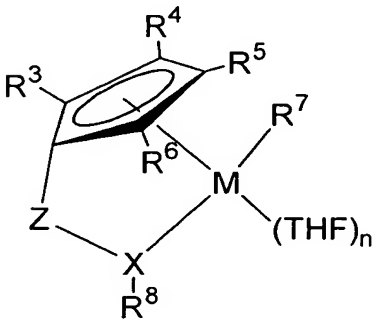
6. A production method for the isoprene-based polymer according to any one of Claims 1 to 5, which comprises;

polymerizing an isoprene-based compound represented by the following Formula (X):



. . . (X)

wherein R^2 represents an alkyl group having 1 to 10 carbon atoms or an alkenyl group having 1 to 10 carbon atoms, in the presence of a polymerization catalyst containing a complex represented by the following Formula (A):



. . . (A)

wherein M represents a rare-earth metal atom, each of R^3 to R^6 independently represents a hydrogen atom or an alkyl group, R^7 represents an alkyl group, R^8 represents an aryl or alkyl group, THF represents a tetrahydrofuran ligand, n denotes an integer of 0 to 2, X represents N, P, or As, and Z represents a dialkylsilylene, dialkyl germanium cross-linking, or ethylene group.

7. The production method according to Claim 6, wherein R^2 in Formula (X) is a methyl group.

8. The production method according to Claim 6 or 7, wherein the polymerization is solution polymerization, and the polymerization reaction temperature is 0°C or lower.